


Martin Marietta Materials

cc: Tom
Wayne
Task 4165



8200 IH 10 West
Suite 600
San Antonio, TX 78230
Telephone (210) 696-8500
Watts (800) 683-2500

May 23, 2011

Paul Baker, Minerals Program Manager
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84116

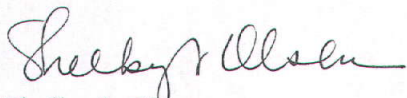
**RE: Martin Marietta Materials Inc., Milford Quarry
Beaver County, Utah, File No. M/001/0036
Response to First Review of Amended Notice of Intention to Commence
Large Mining Operations (Proposed Amendment 4)**

Dear Mr. Baker:

Pursuant to the comments and requirements of your letter to Mr. John Stafne on March 7, 2011, Martin Marietta Materials, Inc. is providing a revised 2010 Bond Estimate to address the reclamation surety calculations. All 7 comments contained in your letter have been addressed as requested.

If you or your staff should have any questions or comments, please do not hesitate to contact me at your earliest convenience. Additionally, our technical consultant for this project is Forster Engineering and you may contact Mr. Charles P. "Frosty" Forster, P.E., P.G. for technical questions or clarifications at (210) 698-5544.

Respectfully,



Shelby J. Olsen
Director of Environmental Services & Land Management

Cc: Charles P. "Frosty" Forster, P.E., P.G.

 **RECEIVED**

JUN 02 2011

DIV. OF OIL, GAS & MINING



2010 Bond Estimate

For

Milford Quarry

Permit # M/001/036

MARTIN MARIETTA MATERIALS, INC.
Milford, Utah

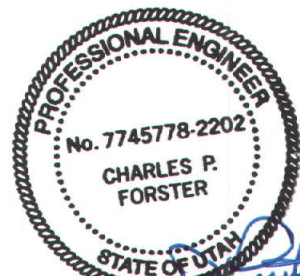
Prepared By:

FORSTER ENGINEERING

FORSTER ENGINEERING
19915 Wittenburg
San Antonio, Texas 78256
Phone: 210-698-5544
Fax: 210-698-5544
www.forsterengineering.com

December 2010

Revised: May 2011



Charles P. Forster
5/23/11

Martin Marietta Materials Inc., (MMM) is operating the Milford Quarry in Beaver County, Utah under Permit # M/001/036. MMM currently has a Surety Bond (#20S101075924) in the amount of \$1,678,599 on file with the State of Utah Department of Natural resources. The reclamation bond estimate for 2010 has been adjusted to reflect the changes proposed in the permit Amendment 4 application submitted to the Division of Oil, Gas and Mining (DOGM) in December 2010. The adjustments reflect current conditions and operations as well as proposed long-term plans.

The mine and reclamation planning, cross-sections, and volume calculations were prepared with Autodesk's AutoCAD Civil 3D software.

Equipment operating costs and labor rates were provided by the Utah DOGM. Costs from the 2011 RS Means Cost Handbook were used in the bond cost estimate.

This bond cost estimate was revised to comply with the format required by DOGM using spreadsheets provided by DOGM. The bond cost summary is shown on the following page. The remainder of the report contains cost calculations of plant and facilities demolition/disposal, earthwork activities, revegetation, and equipment production worksheets.

BOND COST SUMMARY

		Cost \$
Direct Costs		
Subtotal Demolition and Removal		\$259,787
Subtotal Backfilling and Grading		\$1,966,304
Subtotal Revegetation		\$101,147
Total Direct Costs		\$2,327,238
Indirect Costs		
Mob/Demob	10.0%	\$232,724
Contingency	5.0%	\$116,362
Engineering Redesign	2.5%	\$58,181
Main Office Expense	6.8%	\$158,252
Project Management Fee	2.5%	\$58,181
Total Indirect Costs	26.8%	\$623,700
Total Cost 2010		\$2,950,938
Number of years	5	
Escalation factor	0.007	
Escalation		\$104,739
Reclamation Cost Escalated		\$3,055,677
Bond Amount (rounded to nearest \$1,000)		\$3,056,000

Posted Bond \$1,678,599

Difference Between Cost Estimate and Bond -\$1,377,401
Percent Difference -82.06%

Description	Cost
Shop Building	\$ 146,384
Office Building	\$ 14,924
Total	\$ 161,308

Ref.	Description Shop Building	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Area	Volume	Quantity	Unit	Cost
						100	50	25	5000	125000			
	Deduct 50% no interior walls												
	Structure's Demolition Cost	Steel	02 41 16.13 0020	0.31	\$/Cft	100	50	25					
	Structure's Vol. Demolished									125000	125000	CFt	\$ 38,750
	Rubble's Weight (exclude steel)												
	Truck's Capacity												
	Haulage												
	Transportation Cost Non Steel Truck												
	Transportation Cost Non Steel Drive												
	Disposal Cost Non Steel												
	Steel's Weight												
	Truck's Capacity												
	Haulage												
	Transportation Cost Steel Truck												
	Transportation Cost Steel Truck Drive												
	Disposal Cost Steel	Disposal of material - Maximum	02 41 16.15 0500	\$ 13.40	\$/Cy					4630	4630	Cy	\$ 62,037
	Subtotal												\$ 100,787
	Equipment 's Disposal Cost												
	Dismantling Cost												
	Equipment 's Vol. Demolished												
	Loading Costs												
	Transport Costs												
	Disposal Costs												
	Subtotal												\$ -
	Concrete Demolition	6" Concrete slab w/ rebar	02 41 16.17 0440	7.8	/SFt	100	50		5000		5000	SFt	\$ 39,000
	Demolition Cost												
	Concrete's Vol. Demolished												
	Loading Cost												
	Transportation Cost												
	Disposal Costs												
	Subtotal												\$ 39,000
	Concrete Demolition	Concrete Footings 18" x 24"	02 41 16.17 1080	18.15	LFt	100	50				300	LFt	\$ 5,445
	Demolition Cost												
	Concrete's Vol. Demolished												
	Loading Cost												
	Transportation Cost												
	Disposal Costs												
	Subtotal												\$ 5,445
	Concrete Demolition												
	Demolition Cost										126		
	Concrete's Vol. Demolished												
	Loading Cost												
	Transportation Cost												
	Disposal Costs	Concrete On-Site Disposal	02 41 16.17 4200	9.15							126	Cy	\$ 1,152
	Subtotal												\$ 1,152
	Total												\$ 146,384

Ref.	Description Office Building	Materials	Means Reference Number	Unit Cost	Unit	Length	Width	Height	Area	Volume	Quantity	Unit	Cost
	Structure's Demolition Cost					50	24	9					
	Structure's Vol. Demolished	Mixture of types, average	02 41 16.13 0100	\$ 0.33	\$/Cft	50	24	9		10800	10800	Cft	\$ 3,564
	Rubble's Weight (exclude steel)												
	Truck's Capacity												
	Haulage												
	Transportation Cost Non Steel Truck												
	Transportation Cost Non Steel Drive												
	Disposal Cost Non Steel												
	Steel's Weight												
	Truck's Capacity												
	Haulage												
	Transportation Cost Steel Truck												
	Transportation Cost Steel Truck Drive												
	Disposal Cost Steel	Disposal of material - Maximum	02 41 16.15 0500	\$ 13.40		50	24	9		400	400	Cy	\$ 5,360
	Subtotal												\$ 8,924
	Equipment's Disposal Cost												
	Dismantling Cost												
	Equipment's Vol. Demolished												
	Loading Costs												
	Transport Costs												
	Disposal Costs												
	Subtotal												\$ -
	Concrete Demolition	4" Concrete slab w/ wire mesh	02 41 16.17 0280	\$ 5.00	/SFt	50	24		1200		1200		\$ 6,000
	Demolition Cost												
	Concrete's Vol. Demolished												
	Loading Cost												
	Transportation Cost												
	Disposal Costs												
	Subtotal												\$ 6,000
	Concrete Demolition												
	Demolition Cost												
	Concrete's Vol. Demolished												
	Loading Cost												
	Transportation Cost												
	Disposal Costs												
	Subtotal												\$ -
	Concrete Demolition												
	Demolition Cost												
	Concrete's Vol. Demolished												
	Loading Cost												
	Transportation Cost												
	Disposal Costs												
	Subtotal												\$ -
	Total												\$ 14,924

Item No.	Item	Cost \$
1	Truck Dump	\$ 3,858
2	Apron Feeder	\$ 1,199
3	Jaw Crusher	\$ 1,199
4	Overland Conveyor	\$ 28,909
5	Surge Feeder	\$ 1,005
6	60 Ft Surge Conveyor & Magnet	\$ 606
7	90' Stacker	\$ 811
8	Scalper Screen	\$ 1,588
9	50 ' Scalper Belt	\$ 606
10	Omni Cone Crusher	\$ 1,404
11	50' Cone Discharge Conveyor	\$ 606
12	60' Screen Feed Belt	\$ 606
13	El-Jay Screen	\$ 1,588
14	30' Cone Feed Conveyor #1	\$ 303
15	65' Cone Feed Conveyor #2	\$ 606
16	Blending Conveyor	\$ 606
17	60' Fines Conveyor #1	\$ 606
18	60' Fines Conveyor #2	\$ 606
19	100' Fines Stacker	\$ 1,414
20	60' Commercial Conveyor #1	\$ 606
21	60' Commercial Conveyor #2	\$ 606
22	120' Commercial Stacker	\$ 1,414
23	120' Ballast Stacker	\$ 1,015
24	120' Ballast Stacker #1	\$ 1,015
25	60' Ballast Conveyor #2	\$ 606
26	120' Ballast Stacker	\$ 1,015
27	Reclaim Tunnel w/ Feeders & Conveyor	\$ 16,162
28	150' Overflow Stacker	\$ 1,414
29	60' Conveyor Overflow#1	\$ 606
30	80' Conveyor Loadout #1	\$ 575
31	100' Loadout Stacker	\$ 1,015
32	Wet Screen	\$ 2,157
33	150' Overflow Stacker	\$ 1,414
34	Water Well Storage Tank	\$ 606
35	Clean Scrap Yard	\$ 4,066
36	Fuel Storage Tanks (3)	\$ 909
37	MCC Conex	\$ 995
38	Truck Scale	\$ 2,399
39	Equipment Removal to auction lot in Milford	\$ 1,757
40	Misc Solid Waste Disposal Cost	\$ 10,000
Total		\$ 98,479

[illegible]

Page 1 of 1

[illegible]

Page 1 of 1

[illegible]

Page 1 of 1

Page 1 of 1

[illegible]

Page 1 of 1

Revised

Page 1 of 1

[illegible]

Page 1 of 1

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Page 1 of 1

[illegible]

[illegible]

[illegible]

Page 1 of 1

EARTHWORKS COST SUMMARY

Task	Cost
Drill & Shoot	\$ 388,727
Reject Stockpile Slope Reduction	\$ 75,537
Deep Rip Haul Roads	\$ 114,196
Topsoil	\$ 771,430
Revegetation	\$ 101,147
Ponds & Drainage	\$ 89,092
Rail Spur Removal	\$ 527,321
Total	\$ 2,067,451

DRILL AND SHOOT

Task	Total Eq. & Lab. Costs	Units	Quantity	Units	Cost
Drill & Shoot	\$ 1.03	\$/Cy	377405	Cy	\$ 388,727
Note: Unit costs are from actual contractor costs at quarry					
Documentation included in report					
Subtotal					\$ 388,727

REJECT STOCKPILE SLOPE REDUCTION

[illegible]

[illegible]

REVEGETATION

Revegetation	Equipment Cost	Hourly Operating Costs	Equipment Overhead	Operator's Hourly Wage Rate	Hourly Cost	Number of Men or Eq.	Total Eq. & Lab. Costs	Units	Quantity	Units	Production Rate	Units	Equip. + Labor Time/Dis.	Units	Cost
Farm Tractor - Disc	\$ 2,725	\$ 15.50	0.1	67.75	101.83	1	101.83	\$/Hr	173.5	Acres	1.0	Acre/Hr	173	Hrs	\$ 17,663
Farm Tractor - Seed	\$ 2,725	\$ 15.50	0.1	67.75	101.83	1	101.83	\$/Hr	173.5	Acres	1.0	Acre/Hr	173	Hrs	\$ 17,663
Farm Tractor - Mow	\$ 2,725	\$ 15.50	0.1	67.75	101.83	1	101.83	\$/Hr	173.5	Acres	2.0	Acre/Hr	87	Hrs	\$ 8,832
Redo Contingency - 20%	\$ 2,725	\$ 15.50	0.1	67.75	101.83	1	101.83	\$/Hr	-	Acres	1.0	Acre/Hr	-	Hrs	\$ 8,832
Maintenance (Mow)	\$ 2,725	\$ 15.50	0.1	67.75	101.83	1			173.5	Acres	2.0	Acre/Hr	87	Hrs	\$ 8,832
Seed Cost									\$ 39,325	Lumpsum					\$ 39,325
Subtotal															\$ 101,147

Project: Milford Quarry
 Date: 05/02/11
 Prepared by: A.K

WORKSHEET 1
 PRODUCTIVITY AND HOURS REQUIRED FOR DOZER USE

Earthmoving Activity:

Reject Pile Slope Reduction

Characterization of Dozer Used (type, size, etc.):

CAT D10R - Semi-Universal Blade

Description of Dozer Use (origin, destination, grade, haul distance, material, etc.):

Location: Reject Stockpile #2
 Material: Loose shot rock
 Average push distance; 200 Ft
 Downhill push to a 3.7 to 4:1 slope

Productivity Calculations:

$$\begin{aligned}
 \text{Operator Adjustment Factor} = & \boxed{0.75} \times \boxed{1.00} \times \boxed{0.83} \times \boxed{1.50} \times \boxed{1.00} \\
 & \text{operator} \quad \text{material} \quad \text{efficiency} \quad \text{grade} \quad \text{weight} \\
 & \text{factor} \quad \text{factor} \quad \text{factor} \quad \text{factor} \quad \text{correction} \\
 & \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \text{factor} \\
 & \times \boxed{1.20} \times \boxed{0.90} \times \boxed{1.00} = \boxed{1.01} \\
 & \quad \text{production} \quad \text{visibility} \quad \text{elevation} \\
 & \quad \text{method/blade} \quad \text{factor} \quad \text{factor} \\
 & \quad \text{factor}
 \end{aligned}$$

$$\begin{aligned}
 \text{Net Hourly Production} = & \boxed{980} \text{ LCY/hr} \times \boxed{1.01} = \boxed{988} \text{ LCY/hr} \\
 & \text{normal hourly} \quad \text{operating} \\
 & \text{production} \quad \text{adjustment} \\
 & \quad \quad \quad \text{factor}
 \end{aligned}$$

$$\begin{aligned}
 \text{Hours Required} = & \boxed{175000} \text{ LCY} \div \boxed{988} \text{ LCY/hr} = \boxed{177.1} \text{ hr(s)} \\
 & \text{volume to} \quad \text{net hourly} \\
 & \text{be moved} \quad \text{production}
 \end{aligned}$$

Data Source(s):

CAT Performance Handbook

Project: Milford Quarry
 Date: 05/03/11
 Prepared by: A.K

WORKSHEET 2
PRODUCTIVITY AND HOURS REQUIRED FOR RIPPER-EQUIPPED DOZER USE

Ripping Activity:

Deep Rip Haul Roads

Characterization of Dozer and Ripper Use:

CAT D10R with Ripper

Description of Ripping (ripping depth, cut spacing, cut length, and material to be ripped):

Rip Length = 500 Ft
 Rip Depth = 2 Ft
Quantities
 Ballast Pit & Facilities = 67.14 Acres
 Riprap Pit = 1.97 Acres
 Total = 69.11 Acres

Productivity Calculations:

$$\text{Cycle Time} = \frac{500 \text{ ft}}{\text{cut length}} \div \frac{88 \text{ ft/min}}{\text{[speed]}} + \frac{0.25 \text{ min}}{\text{fixed turn time*}} = 5.9 \text{ min/pass}$$

$$\text{Passes/Hour} = \frac{60 \text{ min/hr}}{\text{cycle time}} \div \frac{5.9 \text{ min/pass}}{\text{cycle time}} \times \frac{0.83}{\text{efficiency factor}} = 8.4 \text{ passes/hr}$$

$$\begin{aligned} \text{Volume Cut/Pass} &= \left(\frac{2.0 \text{ ft}}{\text{tool penetration}} \times \frac{3 \text{ ft}}{\text{cut spacing}} \times \frac{500 \text{ ft}}{\text{cut length}} \right) \div 27 \text{ ft}^3/\text{yd}^3 \\ &= 111.11 \text{ BCY/pass} \end{aligned}$$

$$\text{Hourly Production} = 111.11 \text{ BCY/pass} \times 8.4 \text{ passes/hr} = 933 \text{ BCY/hr}$$

$$\text{Hours Required} = \frac{\text{bank volume to be ripped**}}{\text{hourly production}} \text{ BCY} \div \text{BCY/hr} = \text{hr}$$

* Fixed turn time depends upon dozer used. 0.25 min/turn is normal.

** Remember to use the swell factor to convert from bank cubic yards to loose cubic yards when applying these data to Worksheet 5. Calculate separate dozer hauling of ripped material for each lift on that worksheet.

Data Source(s): CAT Performance Handbook

Project: Milford Quarry
 Date: 05/04/11
 Prepared by: AK

WORKSHEET 3
 PRODUCTIVITY OF PUSH-PULL OR SELF-LOADING SCRAPER USE

Earthmoving Activity:

Haul and spread Topsoil

Characterization of Scraper Used (type, capacity, etc.):

Cat Scraper 623G

Description of Scraper Use (origin, destination, grade, haul distance, capacity, etc.):

One way haul distance = 1400 Ft
 Rolling Resistance = 2%
 Grade Resistance = 8%

Productivity Calculations:

$$\begin{aligned} \text{Cycle Time} = & \boxed{0.9} \text{ min} + \boxed{2.3} \text{ min} + \boxed{0.7} \text{ min} + \boxed{1.3} \text{ min} \\ & \text{load time} \quad \text{loaded} \quad \text{maneuver and} \quad \text{return trip} \\ & \text{(push-pull is} \quad \text{trip time} \quad \text{spread time} \quad \text{time} \\ & \text{per pair)} \\ = & \boxed{5.1} \text{ min} \\ & \text{(push-pull is} \\ & \text{per pair)} \end{aligned}$$

$$\begin{aligned} \text{Hourly Production} = & \boxed{23.0} \text{ LCY} \times \boxed{60} \text{ min/hr} \div \boxed{5.1} \text{ min} \times \boxed{0.83} \\ & \text{capacity*} \quad \quad \quad \text{cycle} \quad \text{efficiency} \\ & \quad \quad \quad \text{time**} \quad \text{factor} \\ = & \boxed{224.6} \text{ LCY/hr} \\ & \text{(push-pull is} \\ & \text{per pair)} \end{aligned}$$

$$\begin{aligned} \text{Hours Required} = & \boxed{} \text{ LCY} \div \boxed{} \text{ LCY/hr} = \boxed{} \text{ hr} \\ & \text{volume to be} \quad \quad \text{net hourly} \\ & \text{handled} \quad \quad \text{production} \end{aligned}$$

* The average of the struck and heaped capacities; use total for two scrapers for push-pull.

Data Source(s):

Caterpillar Performance Handbook

Project: **Milford Quarry**

Date : 5/12/11

Prepared By: A.K

WORKSHEET 4
PRODUCTIVITY REQUIRED FOR DOZER USE - GRADING

Characterization of Dozer (type, : D 10R SU

Correction Factors

Operator Factor	0.75
Material Factor	1.2
Slot Dozing	1.2
Effeciency Factor	0.83
Grade Factor	1
Visibility Factor	0.8

Total Adjustment Factors	0.717
--------------------------	-------

Productivity Calculations:

Average Push Distance (Ft)	100	200	400	500
Dozing Productivity (Lcy/Hr)	1700	925	500	400
Adjusted Productivity (Lcy/Hr)	1219	663	359	287

Source: Caterpillar Performance Handbook

Project: Milford Quarry
 Date: 05/03/11
 Prepared by: A.K

WORKSHEET 5
 PRODUCTIVITY AND HOURS REQUIRED FOR DOZER USE - GRADING

Earthmoving Activity:

Characterization of Dozer Used (type, size, etc.):

CAT D10R - Semi-Universal Blade

Description of Dozer Use (% grade, effective blade width, operating speed, etc.):

Location: Reject Stockpile #2
 Material: Loose shot rock
 Average push distance; 200 Ft
 Downhill push to a 3.7 to 4:1 slope

Productivity Calculations:

$$\text{Operator Adjustment Factor} = \begin{array}{c} \boxed{0.75} \\ \text{operator} \\ \text{factor} \end{array} \times \begin{array}{c} \boxed{1.00} \\ \text{material} \\ \text{factor} \end{array} \times \begin{array}{c} \boxed{0.83} \\ \text{efficiency} \\ \text{factor} \end{array} \times \begin{array}{c} \boxed{1.50} \\ \text{grade} \\ \text{factor} \end{array} \times \begin{array}{c} \boxed{1.20} \\ \text{weight} \\ \text{correction} \\ \text{factor} \end{array}$$

$$\times \begin{array}{c} \boxed{1.00} \\ \text{production} \\ \text{method/blade} \\ \text{factor} \end{array} \times \begin{array}{c} \boxed{0.90} \\ \text{visibility} \\ \text{factor} \end{array} \times \begin{array}{c} \boxed{1.00} \\ \text{elevation} \\ \text{factor} \end{array} = \boxed{1.01}$$

$$\text{Hourly Production} = \begin{array}{c} \boxed{2.0} \\ \text{average} \\ \text{speed} \end{array} \text{ mi/hr} \times \begin{array}{c} \boxed{15.9} \\ \text{effective} \\ \text{blade} \\ \text{width} \end{array} \text{ ft} \times \boxed{5280} \text{ ft/mi} \times \boxed{0} \text{ ac}$$

$$\div \boxed{43560} \text{ ft}^2 = \boxed{980.0} \text{ cy/hr}$$

$$\text{Net Hourly Production} = \boxed{980.0} \text{ ac/hr} \times \begin{array}{c} \boxed{1.01} \\ \text{operating} \\ \text{adjustment} \\ \text{factor} \end{array} = \boxed{988} \text{ cy/hr}$$

$$\text{Hours Required} = \begin{array}{c} \boxed{} \\ \text{area to be} \\ \text{graded} \end{array} \text{ ac} \div \begin{array}{c} \boxed{988} \\ \text{net hourly} \\ \text{production} \end{array} \text{ ac/hr} = \boxed{0.0} \text{ hr(s)}$$

Data Source(s): Caterpillar Performance Handbook

R43510

Martin Marietta Materials, Inc.
P.O. Box 30013
Raleigh, NC 27622

Date - 04/05/11
Time - 15:20:39
Page - 1
Receiver - 8267236- 1- WR
Supplier - 327162

Receipt Date

4-5-11

Accrued for
in March

Ship From SANDEX INC
500 PARKSON RD SUITE A
PO BOX 91390
HENDERSON NV 89009-1390

Ship To Milford Quarry - Utah
4.5 Miles N on County Rd 163
Milford UT 84751

Order Date 03/31/11 Supplier NW Contract Blast/FT
Requested 03/31/11 Order Taken By

Ordered By IHDESHK

Account Number	Description 1	Description 2	Quantity Ordered	UM	Unit Cost	Extended ExPrice	Line Number	Quantity Open	Rec'd	Asset/WO Number
55101.44520.20 20 CONTRACT DRILLING	DRILL RENTAL DM45	SERVICE	7.0000	HR	250.0000	1,750.00	1.000		7	
55101.44520.20 20 CONTRACT DRILLING	DRILL RENTAL DM45	SERVICE	7.0000	HR	250.0000	1,750.00	2.000		7	
55101.44520.20 20 CONTRACT DRILLING	DRILL RENTAL DM45	SERVICE	8.0000	HR	250.0000	2,000.00	3.000		8	
55101.44520.20 20 CONTRACT DRILLING	DRILL RENTAL DM45	SERVICE	8.0000	HR	250.0000	2,000.00	4.000		8	
55101.44520.20 20 CONTRACT DRILLING	DRILL RENTAL DM45	SERVICE	8.5000	HR	250.0000	2,125.00	5.000		8.5	

R43510

Martin Marietta Materials, Inc.
P.O. Box 30013
Raleigh, NC 27622

Date - 04/05/11
Time - 15:20:39
Page - 2
Receiver - 8267236- 1- WR
Supplier - 327162

Receipt Date

Ship From SANDEX INC
500 PARKSON RD SUITE A
PO BOX 91390
HENDERSON NV 89009-1390

Ship To Milford Quarry - Utah
4.5 Miles N on County Rd 163
Milford UT 84751

Order Date 03/31/11 Supplier NW Contract Blast/FT
Requested 03/31/11 Order Taken By

Ordered By IHDESHK

Account Number	Description 1	Description 2	Quantity Ordered	UM	Unit Cost	Extended ExPrice	Line Number	Quantity Open	Rec'd	Asset/WO Number
55101.44520.20 20 CONTRACT DRILLING	DRILL RENTAL DM45	SERVICE	9.5000	HR	250.0000	2,375.00	6.000		9.5	
55101.44520.20 20 CONTRACT DRILLING	ANFO BULK	BLASTING AGENT BULK-ANFO	248.8000	CW	31.0000	7,712.80	7.000		248	
55101.44520.20 20 CONTRACT DRILLING	SPARTAN 350	BOOSTERS	60.0000	EA	6.8300	409.80	8.000		60	
55101.44520.20 20 CONTRACT DRILLING	SPARTAN 450	BOOSTERS	60.0000	EA	7.1000	426.00	9.000		60	
55101.44520.20 20 CONTRACT DRILLING	80' EZ DETS	NON ELEC DETONATORS	60.0000	EA	16.5000	990.00	10.000		60	
55101.44520.20	40' EZ DETS	NON ELEC DETONATORS	60.0000	EA	12.0000	720.00	11.000		60	

R43510

Martin Marietta Materials, Inc.
P.O. Box 30013
Raleigh, NC 27622

Date - 04/05/11
Time - 15:20:39
Page - 3
Receiver - 8267236- 1- WR
Supplier - 327162

Receipt Date

Ship From SANDEX INC
500 PARKSON RD SUITE A
PO BOX 91390
HENDERSON NV 89009-1390

Ship To Milford Quarry - Utah
4.5 Miles N on County Rd 163
Milford UT 84751

Order Date 03/31/11 Supplier
Requested 03/31/11 Order Taken By

NW Contract Blast/FT

Ordered By IHDESHK

Account Number	Description 1	Description 2	Quantity Ordered	UM	Unit Cost	Extended ExPrice	Line Number	Quantity Open	Rec'd	Asset/WO Number
----------------	---------------	---------------	---------------------	----	--------------	---------------------	----------------	------------------	-------	--------------------

20 CONTRACT DRILLING

55101.44520.20 20 CONTRACT DRILLING	20' EZTL	NON ELEC DETONATORS	7.0000	EA	6.0300	42.21	12.000			
--	----------	---------------------	--------	----	--------	-------	--------	--	--	--

7

55101.44520.20 20 CONTRACT DRILLING	LEAD IN LINE	OTHER ITEMS	1000.0000	FT	.1100	110.00	13.000			
--	--------------	-------------	-----------	----	-------	--------	--------	--	--	--

1000

55101.44520.20 20 CONTRACT DRILLING	LABOR	SERVICE	20.0000	HR	50.0000	1,000.00	14.000			
--	-------	---------	---------	----	---------	----------	--------	--	--	--

20

23,410.81

MARTIN MARIETTA AGGREGATES BLAST REPORT

PLANT NC YEAR SHOT NO
2011 23

QUARRY/MINE Martin Marietta Milford STATE Utah DATE: 03/23/11 TIME OF BLAST 4:00 PM
Type of Material Blasted Granite PURCHASE ORDER NUMBER: _____
Weather Condition: Clear X P/clear _____ O/cast _____ Rain _____ Wind/from Spe 0 Temp F 40
Location of Blast: Last of this bench
Direction/Distance from Blast to Nearest Non-Quarry Building: 17000 ft
Type of Blast: Production X Other _____
NUMBER OF HOLES: 60 No. of inclined Holes: _____ No. of leveling Holes: _____
HOLE DEPTH: 50 HOLE SIZE 6.75 STEMMING HEIGHTS: 14 Type of stemming: 3/4 Gravel
BURDEN: 14 SPACING: 16 No. of rows 3 Depth of Sub Drilling: 5
Deck Loading: No _____ Yes x (diagram on reverse) Mats used: 1 x Yes _____
Type of Initiation: Electric _____ No. of Series/Circuits _____ Non electric X Other _____
Blasting Machine Model: _____ Sequential Setting: _____
If sequential, was blast fully activated before first hole detonation occurred Yes x No _____
Detonators Used: Manufactured by DYNO x Type EZ Dets Total Number 120

MS	Length	
	60	30FT
#1		
#2		
#3		
#4		
#5		
#6		
#7		

MS	Length	
	60	24
#8		
#9		
#10		
#11		
#12		
#13		
#14		

MS	Length	
	60	24
#15		
#16		
#17		
#18		
#19		
#20		

Higher period, NONEL, Det Cord (no. of feet)

Explosives Materials and Services Used:

Pounds/Units	Manufactured By:	Name/Trademark	Size
24880		ANFO	Bulk
80		1# Cast	1
		Iremite	1
		Heet 30	Bulk

SHOT SERVICE: Yes X No _____ DEWATERING SERVICE: Yes _____ No X

TOTAL POUNDS IN BLAST: 24960 TONS IN SHOT: 51,520 POWDER FACTOR: (TONS/LBS.) 2.06

EXPLOSIVES PERFORMANCE/SERVICE: EXCELL X ACCEPTABLE _____ POOR _____ CPT 0.11

BREAKAGE: EXCELLEN X ACCEPTABLE _____ POOR _____ COMMENTS _____

WALL/BACK-BREAK CONDITION: EXCELLENT _____ MODERATE X POOR _____

\$23,410.81/51,520tons X 2.27tons/cy = \$1.03/cy